REMARKS

Introductory Comments

All claim cancellations and withdrawals, and amendments to the claims, are so made without prejudice or disclaimer to the right to pursue non-elected, deleted, omitted, or cancelled subject matter in one or more continuation or divisional applications.

Unless otherwise indicated, all references to paragraphs, lines, Figures, Examples, etc. refer to those portions of publication No. US 20060122106, which is the publication of the subject application.

Status of the Claims

By virtue of the Listing of Claims presented herein, claims 1-3, 5-12, and 14-32 are pending.

Claims 7 and 15-21 were withdrawn previously, being directed to non-elected subject matter.

Claims 4 and 13 were cancelled previously.

Claim 31 is canceled herein.

Claims 1-3, 5, 6, 8-12, 14, and 22-32 are under consideration.

Claim 1 has been herein amended to recite that the claimed methods comprise peripherally administering" the recited formulations, and to replace the recitation, "22-28" with the recitation, "22-26" and that the recited morphological damage comprises an ulceration. Basis for the recitation "comprising an ulceration may be found, e.g., at paragraph [0051]. Basis for the phrase, "peripherally administering" may be found, for example, at paragraphs [0023] and [0024]; basis for the recitation, "22-26" may be found, e.g., in Balasubramaniam et al., *Peptide Research* (1988) at, e.g., page 34, column 1 and Table 2, which disclose that the "sequence 22-26 [of PYY] plays a crucial role in receptor recognition", and provide data demonstrating such role. Thus, the disclosure in the subject application, for example: at paragraphs [0029]-[0030],which disclose that a "PYY agonist" may comprise, e.g., "an active fragment of PYY", and such "PYY agonists" comprising such an "active fragment of PYY" "have PYY activity typically by virtue of binding to or otherwise directly or indirectly

interacting with a PYY receptor or other receptor or receptors with which PYY itself may interact to elicit a biological response," and at paragraphs [0064]-[0066]; in conjunction with as well as other information within the purview of the artisan at the time of the effective filing date of the subject application (e.g., Balasubramaniam et al., *Peptide Research* (1988) at, e.g., page 34, column 1 and Table 2; US Patent No. 5,604,203; and WO 03/026591 (2003) at, e.g., Table 1, Table 2, and page 49, line 17, through page 77, line 6) the skilled artisan would understand that a "PYY agonist" "comprising an active fragment of PYY" as disclosed in the subject application and recited in the claims comprises amino acids 22-26 of PYY.

Furthermore, as well settled in, e.g., Faulkner v. Inglis, "the forced recitation of known sequences in patent disclosures would only add unnecessary bulk to the specification. Accordingly we hold that where, as in this case, accessible literature sources clearly provided, as of the relevant date, genes and their nucleotide sequences..., satisfaction of the written description requirement does not require either the recitation or the incorporation by reference (where permitted) of such genes and sequences." (Faulkner v. Inglis, 05-1324 Fed. Cir. May 26, 2006). Accordingly, because, at least, the disclosure that "sequence 22-26 [of PYY] plays a crucial role in receptor recognition" was clearly provided in accessible literature sources, the amendment to the claims such that they recite that the recited active fragment comprises amino acids 22-26 of the amino acid sequence set out in SEQ ID NO:2 finds basis as described above, in lieu of an incorporation by reference or an expressed, literal recitation of such sequence in the subject application.

Claims 27-29 have been amended to omit the phrase, "an amino acid sequence as set out in SEQ ID NO:2, wherein said fragment comprises" in order to enhance clarity.

Claim 30 has been amended to omit the phrase, "localized hyperemia with no ulcers".

No new matter has been introduced by virtue of the amendments to the claims as reflected above.

Withdrawn Objections and/or Rejections

Applicants acknowledge the Examiner's withdrawal of the rejection of claims 1-3, 5, and 10 under U.S.C. 103(a) as allegedly being unpatentable over El-Salhy *et al.* (*Peptides* 23:397-402, February 2002) as set forth in the Office Action dated March 5, 2008.

Claim Rejections

Applicants have carefully considered the points raised in the outstanding Office Action and believe that the Examiner's concerns have been addressed as described herein, thereby placing this case into condition for allowance.

Rejection under 35 U.S.C. § 112, first paragraph: New matter

Claims 1-3, 5, 6, 8-12, and 30-32 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner asserts that the recitation, 'wherein said active fragment comprises amino acids 22-28 of the amino acid sequence set out in SEQ ID NO: 2', introduces new matter insofar as the recitation allegedly "is not incorporated by reference and uniquely identified in the application as filed."

Applicant first notes that, as described above, Applicant has amended the claims such that they recite "amino acids 22-26" insofar as the recitation "22-28" represented an inadvertent typographical error in Applicant's previous response. Applicant had intended in Applicant's previous response to amend the claims to recite "amino acids 22-26", exemplary basis for which is provided above. Thus, whereas Applicant's arguments for traversal are directed to the grounds of current rejection as they relate to the as-rejected claim language, such arguments will refer to the recitation "amino acids 22-26" as provided in the claim amendments presented above and the extent to which the grounds of the present rejection might have or might be applied to the recitation, "amino acids 22-26".

As mentioned in Applicant's earlier response(s), as well as above, Applicant clearly discloses that PYY agonists which, for example, comprise an "active fragment of PYY" may be employed in order to practice the claimed methods (see, e.g., paragraphs [0029]-[0030] and [0064-0066]). The Applicant further discloses that such PYY analogs comprising such an "active fragment" "have PYY activity typically by virtue of binding to or otherwise directly or indirectly interacting with a PYY receptor or other receptor or receptors with which PYY itself may interact to elicit a biological response (see, e.g., paragraphs [0029-[0030]). The Application also

discloses that "

As stated in Applicant's previous response - but not addressed by the Examiner in the allegation – the disclosure of a fragment of PYY consisting of amino acids 22-26 of PYY (i.e., SEQ ID NO: 2) as a fragment that possesses, e.g., PYY receptor binding affinity was within the purview of the skilled artisan by virtue of, at least, Balasubramaniam et al., *Peptide Research* (1988) at, e.g., Figure 2, Table 2, and column 1 of page 34. Further, Balasubramaniam et al., discloses that the "sequence 22-26 [of PYY] plays a crucial role in receptor recognition. (Balasubramaniam et al. (1988), page 34, column 1 and Table 2). Thus, the skilled artisan would understand that PYY fragments comprising, e.g., amino acids 22-26, constitute "PYY agonists" comprising "an active fragment of PYY".

In this regard, as Applicant has discussed in previous response(s), it has been well established by, e.g., Capon 418 F.3d at 1357 that "[a]s each field evolves, the balance also evolves between what is know and what is added by each inventive contribution." As further settled in Faulkner, "the forced recitation of known sequences in patent disclosures would only add unnecessary bulk to the specification. Accordingly we hold that where, as in this case, accessible literature sources clearly provided, as of the relevant date, genes and their nucleotide sequences (here "essential genes"), satisfaction of the written description requirement does not require either the reference or the incorporation by reference (where permitted) of such genes and sequences." (Faulkner, 05-1324 Fed. Cir. May 26, 2006). Thus, although the issue in the instant case pertains to protein sequences - as opposed to nucleic acid sequences - the spirit and scope of the findings of Capon and Faulkner cannot be reasonably doubted to apply to the instant case. Accordingly, notwithstanding Applicant's disagreement with the Examiner's assertion that the recitation, "wherein said active fragment comprises amino acids 22-28 [or 22-26] of the amino acid sequence set out in SEQ ID NO: 2" (bracketed portion inserted by Applicant), was not properly incorporated by reference, such an assertion is immaterial insofar as the information in question - e.g., the identification of amino acids 22-26 of PYY as containing "the active site", and thus constituting an "active fragment" of PYY - was well within the purview of the artisan by way of, e.g., accessible literature clearly disclosing such information.

Accordingly, the recitation does not constitute new matter. The rejection should be withdrawn.

Rejection under 35 U.S.C. § 112, first paragraph: written description

Claims 1-3, 5, 6, 8-12, and 22-32 are rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner asserts that "the specification discloses an actual reduction to practice and the complete chemical structure of only one species of the claimed genus of PYY agonists, i.e., PYY(3-36). The specification does not indicate that any other PYY agonists comprises amino acids 22-28 of the amino acid sequence set in SEQ ID NO: 2 [sic] that both protect from or reduce colon injury associated with inflammatory bowel disease or ulcerative colitis [sic] and bind specifically in a Y receptor assay or in a competitive binding assay". Applicant traverses for the reasons set forth below, at least.

Applicant first notes that, as described above, Applicant has amended the claims such that they recite "amino acids 22-26" insofar as the recitation "22-28" represented an inadvertent typographical error in Applicant's previous response. Applicant had intended in Applicant's previous response to amend the claims to recite "amino acids 22-26", exemplary basis for which is provided above. Thus, whereas Applicant's arguments for traversal are directed to the grounds of current rejection as they relate to the as-rejected claim language, such arguments will refer to the recitation "amino acids 22-26" as provided in the claim amendments presented above and the extent to which the grounds of the present rejection might have or might be applied to the recitation, "amino acids 22-26".

As mentioned above, and contrary to the Examiner's assertions, exemplary "active fragments of PYY" comprising amino acids 22-28 (as well an 22-26) were within the purview of the skilled artisan at the time of the effective filing date, as well as their capability of binding in a Y receptor assay as well as in a competitive binding assay (see, e.g., Balasubramaniam et al., *Peptide Research* (1988) at, e.g., Figure 2; Table 2; column 1 of page 34). Numerous other PYY agonists comprising such "active fragments" suitable for practicing the claimed methods were also disclosed in the literature (see, e.g., US 5,604,203, US 5,912,227, US 5,916,69, and WO 03/026591. Applicant discloses the use of an exemplary PYY agonist comprising amino acids

22-26 in the reduction of morphologic damage comprising ulceration. Applicant discloses that PYY agonists comprising "an active fragment of PYY", such as amino acids 22-26, and which bind to a Y receptor in a PYY assay (see, e.g., paragraphs [0082]-[0087] are suitable to practice the claimed methods. Thus, in addition to an actual reduction to practice the claimed methods, Applicant provides ample descriptive support by was of constructive reduction to practice commensurate with the scope or the claims.

In this regard, the Courts have been well-settled that "the forced recitation of known sequences in patent disclosures would only add unnecessary bulk to the specification. Accordingly we hold that where, as in this case, accessible literature sources clearly provided, as of the relevant date, genes and their nucleotide sequences..., satisfaction of the written description requirement does not require either the recitation or the incorporation by reference (where permitted) of such genes and sequences." Further, where, as in this case, accessible literature sources clearly provided, as of the relevant date, genes and their nucleotide sequences (here "essential genes"), satisfaction of the written description requirement does not require either the reference or the incorporation by reference (where permitted) of such genes and sequences"; there is no *per se* rule that an adequate written description of an invention that involves a biological macromolecule must contain a recitation of **known** structure." Furthermore, "[n]one of the cases to which the Board attributes the requirement of total DNA re-analysis, *i.e.*, *Regents v. Lilly, Fiers v. Revel, Amgen*, or *Enzo Biochem*, require a re-description of what was already known." *Capon v. Eshhar*, 76 USPQ2d 1078 (Fed. Cir. 2005). (Faulkner v. Inglis, 05-1324 Fed. Cir. May 26).

With regard to the Examiner's allegation concerning "only one" "actual reduction to practice", Applicant notes that Faulkner has also reaffirmed that, in fact, neither examples nor "2. Actual Reduction to Practice" is required in order to satisfy the written description requirement:

> As we explained in Capon v. Eshhar, "[t]he 'written description' requirement implements the principle that a patent must described the technology that is sought to be patented; the requirement serves both to satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed... See Univ. of Rochester v. G.D. Searle & Co., 358 F.3d 916, 926

> (Fed. Cir. 2004) ("We of course do not mean to suggest that the written description requirement can be satisfied only by providing a description of an actual reduction to practice. Constructive reduction to practice is an established method of disclosure…"). Rochester, moreover, is consistent with Supreme Court precedent. In the context of interpreting 35 U.S.C. 201(b), the Court held that "[t]he word 'invention' must refer to a concept that is complete, rather than merely one that is 'substantially complete'" Pfaff v. Wells Elecs., 525 U.S. 55, 66 (1998). It then proceeded to make clear that although "reduction to practice ordinarily provides the best evidence that an invention is complete….it does not follow that proof of reduction to practice is necessary in every case." Id. (emphasis added). Thus, to the extent that written description requires a showing of "possession of the invention," Capon, 418 F.3d at 1357 (emphasis added), Pfaff makes clear that an invention can be "complete" even where an actual reduction to practice is absent. The logical predicate of "possession", is of course, "completeness". (Faulkner v. Inglis, 05-1324 Fed. Cir. May 26)

As mention above, in the subject case, one (as opposed to no) actual reduction to practice is provided, as well as ample disclosure providing constructive reduction to practice sufficient to demonstrate that the "invention" encompassed by the claimed methods was "complete" such that the skilled artisan would understand that Applicant was in possession of the claimed invention for the purposes, and to the satisfaction of, the requirements of 35 U.S.C. 112, first paragraph – written description. Accordingly, the written description requirement is in error and should be withdrawn.

Rejection under 35 U.S.C. § 112, first paragraph: written description

Claims 1-3, 5, 6, 8-12, and 22-32 are rejected under 35 U.S.C. § 112, first paragraph, because the specification allegedly "does not reasonably provide enablement for the claimed invention commensurate in scope with the claims." Specifically, the Examiner asserts that: whereas the claims allegedly encompass central administration of the recited compounds, the subject application allegedly only enable peripheral administration; the specification does not "provide guidance and working examples with respect to preventing an intestinal damage"; and "the specification fails to provide sufficient guidance and working examples on how to make and use the genus of PYY agonists".

With regard to alleged lack of enablement for central administration, Applicant submits that the amendments to the claims, which recite that the compounds are administered via peripheral administration, renders the rejection as it pertains to central administration moot. With regard to the allegation of lack of "guidance and working examples with respect to preventing an intestinal damage," Applicant first reminds the Examiner of the lack of any requirement for a working example, pre se, as discussed above. This notwithstanding, Applicant notes that the specification discloses that the results of working example titled Example 1 indicates that "PYY or a PYY agonist may be used to protect from colon injury (see, e.g., Example 1 beginning at paragraph [0050], and particularly paragraph [0062]. The Examiner has provided no reason why the skilled artisan would doubt these results or the truth or veracity of the interpretation of Applicant's disclosed interpretation of these results. Applicant submits that, in view of the foregoing, at least, the subject application provided ample enabling disclosure for the recitation in the claims concerning "preventing" the recited damage. With regard to the allegation that "the specification fails to provide sufficient guidance and working examples on how to make and use the genus of PYY agonists", Applicant refers to the discussion concerning lack of requirement for "working examples", above. This notwithstanding, Applicant hereby incorporates by reference Applicants discussion concerning written description support for such PYY agonists, provided above, and submits that such discussion applies to and traverses the present enablement rejection with regard to such recitation.

In view of the foregoing, Applicant submits that the rejection under 35 U.S.C. 112, first paragraph –enablement is traversed and/or moot and should be withdrawn.

Rejection under 35 U.S.C. § 102(b)

Claims 1, 2, 5, and 10-12 and 22-32 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Balasubramaniam (U.S. Patent No. 5, 604, 203), hereinafter '203. Specifically, the Examiner repeats the assertions presented in the Office Action dated March 5, 2008, at page 6, lines 4-17, and adds that "the intestinal damage caused by these gastrointestinal disorders necessarily comprises a morphological damage, such as those listed in claims 30-32."

Applicant traverses. To anticipate a claim, a reference must disclose every element of the claim. *Verdegaal Bros. v. Union Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir.

1987) and In re Donohue, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985). An anticipation rejection requires a showing that each element of the claim is found in a single reference, practice or device. In re Donohue, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985). The absence of a single claimed element from a cited reference precludes a finding of anticipation. Atlas Powder Company v. E.I. du Pont de Nemours, 750 F.2d 1569, 1574, 224 U.S.P.Q. 409, 411 (Fed. Cir. 1984).

Nowhere in the cited reference is there a specific recitation with regard to "a morphological damage" in the cited reference, nor to any of the damage recited in claims 30-32. Nonetheless, Applicant has amended the claims to recite that the morphological damage comprises "an ulceration". None of the "gastrointestinal disorders" allegedly disclosed in the cited reference is taught to necessarily comprise an ulceration.

In view of the foregoing, Applicant submits that the 102(b) rejection is traversed and/or moot, and should be withdrawn.

Rejection under 35 U.S.C. § 103(a)

The Examiner has again rejected claim 14 under 35 U.S.C. § 103(a) as being allegedly unpatentable over Balasubramaniam (U.S. Patent No. 5, 604, 203), hereinafter '203, as applied to claims 1, 2, 5, and 10-12 above, and further in view of Dumont et al. 26:320-324 (1994). Specifically, the Examiner asserts that whereas '203 allegedly teaches a method of treating intestinal damage comprising administering a pharmaceutically active formulation of PYY or a PYY agonist to a human as applied to claims 1, 2, 5, and 10-12 above, '203 fails to teach the method of claim 14, comprising administering PYY[3-36]. The Examiner applies Dumont et al. in an attempt to cure the deficiencies of '203. Applicant respectfully traverses.

Notwithstanding the comments Applicant provided to this rejection in Applicant's previous response, which Applicant thereby incorporates by reference in its entirety, Applicant submits that Dumont fail to teach or suggest an ability of a PYY or PYY agonist to treat, ameliorate, prevent, or protect from a morphological damage comprising an ulceration upon peripheral administration to a subject. Thus, Dumont fails to cure the deficiencies of the primary reference. Accordingly, the 103(a) rejection is traversed and/or moot and should be withdrawn.

Conclusion

In conclusion, all rejections and objections outlined in the outstanding Office Action are in error and should be withdrawn.

Applicants believe that all issues raised in the Office Action have been properly addressed in this response and in the amendments to the claims as shown in the attached Listing of Claims. Accordingly, reconsideration and allowance of the amended claims is respectfully requested. If the Examiner feels that a telephone interview would serve to facilitate resolution of any outstanding issues, the examiner is encouraged to contact Applicants' representative at the telephone number below.

No additional fees are believed due for this submission. However, if a fee is due, the Commissioner is hereby authorized to charge payment of any fees associated with this communication, to Applicant's Deposit Account No. 010535 referencing Docket No. 0402US-UTL. Additionally, the Commissioner is hereby authorized to charge payment or credit overpayment of any fees during the pendency of this application to Applicant's Deposit Account No. 010535.

Date: June 10, 2009

Respectfully submitted,

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